REMARKS

Summary of the Office Action

Claims 1 and 5 are considered in the Office action.

The proposed drawing correction has been approved. The Office action requires a replacement drawing sheet.

The specification has been objected to as unclear. In particular, the section describing the $tclSetMCD and $tclAddMCD functions (substitute specification at page 16, line 25 through page 17, line 2) has been objected to for lack of clarity.

Claims 1 and 5 have been rejected under 35 U.S.C. § 102(b) as anticipated by Steinmetz, Jr. U.S. Patent No. 5,600,579 ("Steinmetz").

Summary Of Applicants' Response

Applicants enclose herewith a replacement drawing sheet. Applicants also have deleted the portion of the substitute specification regarding the $tclSetMCD and $tclAddMCD functions. Further, applicants have amended claim 1 and added new claims 55 and 56 to more particularly point out and distinctly claim the invention.

Reply to Rejections Under 35 U.S.C. § 102(b)

Claims 1 and 5 have been rejected under 35 U.S.C. § 102(b) as anticipated by Steinmetz.

Amended independent claim 1 recites a method for providing a design test bench using a single executable program. New independent claim 55 recites a method for providing a design test bench using multiple threads to partition functionality of the test bench between a simulation engine and one or more scripted routines. Steinmetz does not describe or suggest the claimed invention, and in fact, distinctly points away from the claimed invention.

Steinmetz describes a hardware design verification system including simulator means, test script means and dispatch means, each of which is a separate executing computer program under control of an operating system that provides for concurrent execution of computer programs. (Col. 3, lines 3-6; Col. 3, lines 20-24). In particular, hardware design verification system 100 includes a number of program modules that execute concurrently on a time-sharing operating system. (Col. 4, line 66 through Col. 5, line 3). The program modules include simulation environment 101, test script 103 and dispatch module 105. (Col. 5, lines 21-22; Col. 5, lines 36-37; Col. 5, lines 47-48). Simulation environment 101 provides the resources for modeling the operation of circuit under test 115 and master model 113. (Col. 5, lines 22-27). Test script 103 is designed to test particular features of circuit under test 115. (Col. 5, lines 37-38). Dispatch module 105 bridges the executing test script 103 and simulation environment 101 by forking off the test script and the simulation environment as child processes that run independently of the dispatch means, which is the parent process. (Col. 3, lines 26-29; Col. 5, lines 47-51). Dispatch module 105 communicates with simulation environment and with test script 103 via data socket-based packet communication. (Col. 56-59).

Unlike the claimed invention, Steinmetz does not describe or suggest a hardware design verification system that provides a design test bench using a single executable program. Indeed, Steinmetz' system uses separate executable programs to implement simulation environment 101, test script 103 and dispatch module 105. Similarly, Steinmetz does not describe or suggest a hardware design verification system that uses multiple threads to partition functionality of the test bench between a simulation engine and one or more scripted routines. Applicants respectfully submit that a person of ordinary skill in the art would understand that multiple threads are part of a single executable program.

These distinctions are significant, because the claimed methods offer several advantages over the Steinmetz approach. Indeed, the claimed methods allow faster communication between the simulation engine and the scripted routines than Steinmetz' socket-based communication approach. As a result, the claimed methods require less overhead than the Steinmetz system, in which communication between test scripts 103 and simulation environment 101 occurs only via sockets.

Because Steinmetz does not describe or suggest the claimed invention, applicants respectfully request that the §102(b) rejection of claim 1 be withdrawn. Because claim 5 depends from claim 1, applicants further respectfully request that the §102(b) rejection of claim 5 be withdrawn.

Conclusion

For the reasons stated above, applicants submit that this application, including claims 1, 5 and 55-56, is allowable. Applicants therefore respectfully request that the Examiner allow this application.

Respectfully submitted,

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